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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/811,999

03/30/2004

Kenichi Shirasaka

X2007.0158

2679

32172

7590

06/29/2006

DICKSTEIN SHAPIRO MORIN & OSHINSKY LLP  
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EXAMINER

PIZARRO CRESPO, MARCOS D

ART UNIT

PAPER NUMBER

2814

DATE MAILED: 06/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/811,999

Applicant(s)

SHIRASAKA, KENICHI

Examiner

Marcos D. Pizarro-Crespo

Art Unit

2814

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 May 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) 1,2,4-9 and 11 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 3,10 and 12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-12 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 May 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>3/10/2006</u> | 6) <input type="checkbox"/> Other: _____  |

Application/Control Number: 10/811,999 (Final Rejection)  
Art Unit: 2814

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Attorney's Docket Number: X2007.0158

Filing Date: 3/30/2004

Claimed Foreign Priority Date: 4/2/2003 (JP 2003-099126)

Applicant(s): Shirasaka

Examiner: Marcos D. Pizarro-Crespo

### **DETAILED ACTION**

This Office action responds to the amendment filed on 5/30/2006.

#### ***Acknowledgment***

1. The amendment filed on 5/30/2006, responding to the Office action mailed on 11/28/2005, has been entered. The present Office action is made with all the suggested amendments being fully considered. Accordingly, pending in this Office action are claims 1-12.

#### ***Drawings***

2. The drawings received on 5/30/2006 are accepted.

#### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 3, 10, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frezza (US 6909166) in view of Harper.

5. Regarding claims 10 and 12, Frezza (see, e.g., fig. 9 and 10) teaches a manufacturing method for a semiconductor package comprising the steps of:

- ✓ Forming a lead frame by processing a thin plate (see, e.g., col.4/ll.63-67), wherein the lead frame comprises:
  - A stage **70** for mounting a semiconductor chip **12** thereon
  - A plurality of groups of leads **71** arranged in a periphery of the stage **70**
  - A plurality of lead interconnection members for interconnecting a plurality of leads in each of the group of leads (see, e.g., fig. 9)
- ✓ Mounting the chip on the stage of the lead frame via bonding (see, e.g., fig. 2)
- ✓ Wiring the chip to the plurality of leads (see, e.g., fig. 2)
- ✓ Forming a molded resin **61** for integrally fixing the chip, the stage, and the leads therein, the molded resin having side surfaces **36** around a periphery **37** thereof (see, e.g., figs. 2, 7 and 10)
- ✓ Plating prescribed surfaces of the leads that are exposed to an exterior of the resin (see, e.g., col.5/ll.41-42)
- ✓ Cutting the leads **71** at a plurality of cutting lines **34** so that the leads **71** are made electrically independent of each other (see, e.g., figs. 9 and 10), and so that the plurality of leads do not extend beyond side surfaces **37** of the molded resin (see, e.g., col.5/ll.56-58)

Wherein:

- ✓ A through hole is formed in each lead in a thickness direction of the lead frame so as to allow the cutting lines to pass therethrough (see, e.g., figs. 9 and 10)
- ✓ The through holes are formed at a selected timing within a prescribed time period counting from a timing of forming the lead frame to a timing of plating the leads (see, e.g., col.5/ll.45)

Frezza, however, fails to specify that the lead frame be made of metal. Harper (see, e.g., pp.6.18/par.3), on the other hand, teaches that leadframes are usually made of a copper alloy for better thermal performance.

It would have been obvious at the time of the invention to one of ordinary skill in the art to have Frezza's lead frame made of the metal suggested by Harper for better thermal performance.

6. Regarding claim 10, Frezza shows the through holes are formed by etching (see, e.g., col.5/ll.45).

### ***Response to Arguments***

7. The applicants argue:

The independent claims now require that the plurality of leads do not extend beyond the side surface of the molded resin. Neither Frezza nor Harper teach or suggest this limitation of the present invention. For example, all of the leads in Frezza extend beyond its molded resin as illustrated in figures 7, 8, 9, 12, and 13.

The examiner responds:

Although figures 7, 8, 12, and 13 of Frezza show the leads extending beyond the side surface of the resin, that is not the case of the embodiment of figures 9 and 10. As Frezza describes, the leads of figures 9 and 10 have their side surfaces 36 in the

perimetric zones **37** encapsulated by the resin **60** while their side surfaces **36** in the etching zone **39** is exposed for plating (see, e.g., col.5/II.41-46, 56-60).

### ***Conclusion***

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

9. A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

10. Papers related to this application may be submitted directly to Art Unit 2814 by facsimile transmission. Papers should be faxed to Art Unit 2814 via the Art Unit 2814 Fax Center. The faxing of such papers must conform to the notice published in the Official Gazette, 1096 OG 30 (15 November 1989). The Art Unit 2814 Fax Center number is **(571) 273-8300**. The Art Unit 2814 Fax Center is to be used only for papers related to Art Unit 2814 applications.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Marcos D. Pizarro-Crespo** at **(571) 272-1716** and between the hours of 10:00 AM to 8:30 PM (Eastern Standard Time) Monday through

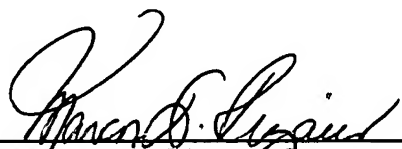
Thursday or by e-mail via [Marcos.Pizarro@uspto.gov](mailto:Marcos.Pizarro@uspto.gov). If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy, can be reached on (571) 272-1705.

12. Any inquiry of a general nature or relating to the status of this application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Art Unit: 2814

13. The following list is the Examiner's field of search for the present Office Action:

Field of Search	Date
U.S. Class / Subclass(es): 257/666-796	6/23/2006
Other Documentation:	
Electronic Database(s): EAST (USPAT, EPO, JPO)	6/23/2006



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MDP/mdp  
June 23, 2006